Page 1, after the first paragraph above, please insert:

## Background

### Field of the Invention

This invention relates *inter alia* to artificial or modified natural blood-flow tubing, by which is meant artificial vascular prostheses or modified natural grafts or autografts, and tubing in which blood flows outside the body, e.g. in dialysis or in open heart surgery. Indeed, the invention might well extend to any tubing that carries a laminar flow, and particularly, but by no means exclusively, a pulsatile flow.

### Description of the Related Art

Spiral flow has been observed (Stonebridge P. A. and Brophy C. M., 1991, Spiral laminar flow in arteries? Lancet 338: 1360-61) during angioscopy, as has the presence of spiral folds on the endoluminal surface of blood-vessels. The observation, it was said could have been an ~~artefact~~ artifact of angioscopy, or the phenomenon may occur only in diseased arteries because of turbulence generated atherosclerosis, or it may be physiological, the latter having some support from other observations of rotational flow.

Page 2, before the fourth paragraph, insert:

### Brief Summary of the Invention

The invention comprises, in one aspect, tubing, especially, but not exclusively artificial or modified natural blood flow tubing, having helical-flow inducing means adapted to induce helical flow in such fashion as to eliminate or reduce turbulence.

Page 7, before the third paragraph, insert:

Brief Description of the Drawings

Embodiments of tubing and methods of making and using the same in accordance with the invention will now be described with reference to the accompanying drawings, in which:

Page 8, after the Figures and before the second to the last paragraph, insert:

Detailed Description of the Invention

The drawings illustrate blood-flow tubing 11 having helical-flow inducing means 12 adapted to induce helical flow in such fashion as to eliminate or reduce turbulence. The tubing may be artificial, for example woven or knitted synthetic polymer fibre, in which the helical-flow inducing means may be knitted or woven structure as by three dimensional knitted or woven formation, or extruded or cast tubing, or modified natural, e. g. autograft material with an insert or with grooving made e. g. by a laser.

Page 10, third paragraph:

Figures 6 and 7 illustrate helical vane devices 71 which can be inserted in tubing to cause helical flow. In Figure ~~8~~ 7 the effect can be increased by a probe 81 as used in angiography. The vanes 82 are on a sleeve 83 and sufficiently flexible to be compressed on a rigid support 84 by a sleeve 85 of the probe 81 being advanced relative to a core 86, the core 86 engaging the support 84 while the sleeve 85 is advanced against the sleeve 83, the sleeve 83 being held in the compressed state by a ratchet arrangement ~~87~~ 89 between support 84 and sleeve 83. Such a device may be adjusted during angiography while observing the rotational flow induced, thereby, e.g. by MRI. The adjustment may be effected in any other fashion, e.g. by the application of torque to one end while holding the other end fixed.

Page 11, third paragraph:

Figures 13 and ~~16~~ 14 illustrate, by way of example, the application of the notion of helical flow to an oil pipeline 141. The pipeline 141 is itself made up from pipe sections 142, which may themselves have internal helical grooving and/or ridging 143. In addition, active flow rotating means 144 are provided at intervals along the pipeline 141, at junctions between pipe sections 142. The active flow rotating means comprise, as seen in Figure 13, rotary vanes 145 mounted in connecting rings 146.